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*AMSAT *News Service*ANS-089*
March 30, 2025

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The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on https://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

Fram2 Mission With Amateur Radio Payload Scheduled to Launch March 31st

Fram2 is currently scheduled to launch on April 1, 2025 at 01:46:50 UTC (March 31, 2025 at 21:46:50 EDT).

The Fram2 mission is set to become the first human space flight in polar orbit – flying over the North and South poles. Named after the famous polar exploration ship Fram, which completed voyages to both the Arctic and Antarctica, we want to showcase pioneering spirit, wonder and technological innovation through the ages. The SpaceX Falcon 9 rocket will launch four astronauts from Europe and Australia into orbit for 3-5 days, target. On board the Dragon spacecraft are mission commander Chun Wang of Malta, vehicle commander Jannicke Mikkelsen of Norway, pilot Rabea Rogge of Germany and mission specialist Eric Philips of Australia. During the Fram2 mission Rabea Rogge, LB9NJ (Norway) and KD3AID (USA), will be operating the onboard
amateur (ham) radio system <https://fram2ham.com/> sending SSTV images as part of a high school and university student competition. These SSTV images will also be available to be received by the general public during the mission. Read more about Fram2 and its crew here: f2.com

SSTV transmissions will be transmitted on 437.550 MHz FM using Robot36. TLEs for the mission are available from https://www.ariss.org/keps.html

Provisional elements for the upcoming Fram2Ham mission have also been added t0 the AMSAT TLE distributions courtesy of ARISS, and will be updated when the SpaceX Dragon vehicle attains orbit. Updates will be found at

www.amsat.org/tle/dailytle.txt as appropriate. The mission has also been added to the AMSAT Satellite Status <https://amsat.org/status/> p[age for reports

Anyone may submit images to the gallery on the https://ariss-usa.org/ARISS_SSTV/submit.php page along with information about when and where the image was received.

Please note that because the Fram2Ham event is a competition, all submitted images will be held in a queue not available for viewing until after the competition judges have had a chance to make their decisions. After the winners have been announced, the Fram2Ham images will be available for viewing the same as all the other ISS SSTV campaign images. Teams and members of the general public are asked to *not* distribute copies of their received images to social media until after the winners of the competition have been announced.

[ANS thanks ARISS and Fram2Ham for the above information]

AMSAT Remove Before Flight Key Tags Now Available
Yes, These are the Real Thing!
* <https://www.zazzle.com/amsat_car_flag-256716714380264543>*

Your $20 Donation Goes to Help Fly a Fox-Plus SatelliteIncludes First Class Postage (Sorry – U.S. Addresses Only)Order Today at https://www.amsat.org/product/amsat-remove-before-flight-keychain <https://www.amsat.org/product/amsat-remove-before-flight-keychain/>

GridMasterMap Satellite Top 100 Rovers April 2025 Rankings

The April 2025 rankings for the Top 100 Rovers (Mixed LEO/MEO/GEO) in satellite operations, as determined by @GridMasterMap <https://x.com/GridMasterMap> on Twitter, has been released. The ranking is determined by the number of grids and DXCC entities activated, taking into account only those grids where a minimum number of QSOs logged on the gridmaster.fr website have been validated by a third party. Grid numbers do not directly reflect the exact number of activations. Satellite operators are encouraged to upload their LoTW satellite contacts to https://gridmaster.fr in order to provide more accurate data.

Updated: 2025-03-28

1	ND9M	26	KX9X	51	W7WGC	76	N4UFO
2	NJ7H	27	ON4AUC	52	N6DNM	77	PT2AP
3	JA9KRO	28	KG5CCI	53	JK2XXK	78	AA8CH
4	UT1FG	29	N5BO	54	JL3RNZ	79	PT9BM
5	N5UC	30	K8BL	55	EA4NF	80	VE1VOX
6	DL6AP	31	KE4AL	56	SM3NRY	81	FG8OJ
7	OE3SEU	32	KB5FHK	57	DF2ET	82	YU0W
8	WI7P	33	VE3HLS	58	XE1ET	83	KJ7NDY
9	DP0POL	34	PA3GAN	59	LU4JVE	84	N6UTC
10	K5ZM	35	KI0KB	60	AA5PK	85	KI7UXT
11	F5VMJ	36	JO2ASQ	61	KI7QEK	86	AF5CC
12	N6UA	37	KI7UNJ	62	SP5XSD	87	WA9JBQ
13	HA3FOK	38	LA9XGA	63	F4DXV	88	KB2YSI
14	LU5ILA	39	F4BKV	64	AD7DB	89	N4DCW
15	N9IP	40	BA1PK	65	VE1CWJ	90	JM1CAX
16	WY7AA	41	VA3VGR	66	KE9AJ	91	K0FFY
17	W5PFG	42	N7AGF	67	DL4EA	92	VE3GOP
18	DL2GRC	43	VK5DG	68	N8RO	93	N0TEL
19	AK8CW	44	XE3DX	69	KM4LAO	94	KG4AKV
20	AD0DX	45	KE0WPA	70	VA7LM	95	W8MTB
21	N4AKV	46	PR8KW	71	BG7QIW	96	CU2ZG
22	AD0HJ	47	KE0PBR	72	M1DDD	97	VE7PTN
23	WD9EWK	48	K7TAB	73	W8LR	98	DK9JC

24 ND0C 49 EB1AO 74 W1AW 99 K6VHF
25 DJ8MS 50 AC0RA 75 HB9GWJ 100 VE6WK

[ANS thanks @GridMasterMap <https://x.com/GridMasterMap> for the above information]

The 2025 AMSAT President’s Club Coins Have Just Arrived!
Celebrating the 40th Anniversary of Amateur Radio on Human Spaceflight
*Help Support GOLF and Fox Plus.**Join <https://www.amsat.org/join-the-amsat-presidents-club/> the AMSAT President’s Club today!*

Heathkit Now Offering AMSAT CubeSatSim Kits

AMSAT has partnered with Heathkit to offer AMSAT CubeSatSim kits. Below is the description of Heathkit's offering from their website <https://shop.heathkit.com/products/amsat?variant=49895666090296>:

Heathkit is thrilled to make our return to the Amateur Radio sector in partnership with AMSAT and Kirkwall through a special Heathkit edition of the AMSAT CubeSatSim.

Designed by Alan Johnston (KU2Y), the CubeSatSim is a low cost satellite emulator that runs on solar panels and batteries, transmits UHF radio telemetry, has a 3D printed frame, and can be extended by additional sensors and modules. Through integration with the Kirkwall IoT monitoring software, this CubeSatSim educator pack builds on the opportunity to learn about satellite communications and Command & Control (C2) with the addition of the comprehensive Kirkwall monitoring platform for any sensors connected to the CubeSatSim through the QWIIC connect system. With applications ranging from university research to space enthusiast and hobbyist builds, users will enjoy the ultimate hands-on educational experience in CubeSat engineering, satellite communications through Amateur Radio, and satellite IoT sensor monitoring.

The first 10 orders will include a real, space-flown fragment of the Apollo 11 Command Module Columbia foil that protected Neil Armstrong, Buzz Aldrin, and Michael Collins as they flew to the moon and back, and will ship the week of 01 May 2025. Subsequent orders will include additional one-of-a-kind space artifacts from flown space missions.

The CubeSatSim has the following features:

- Working solar panels and rechargeable batteries
- Multi-channel voltage, current, and temperature telemetry transmitted in the Amateur Radio UHF band
- Telemetry decoding using FoxTelem software or APRS software
- Payload microcontroller Raspberry Pi Pico and sensors
- Integrated Low Pass Filter
- 3D printed frame and solar panels

In addition to the CubeSatSim, this special Heathkit addition includes:

- 1 historical space artifact from a flown space mission
- 1 Copy of *CubeSat Engineering* by Patrick Stakem
- 1 Copy of *Amsats and Hamsats: Amateur Radio and other Small Satellites* by Andrew Barron
- 1 Copy of *FM Satellite Communications for Beginners* by Brian Schell
- 1 Copy of *Hacking Cubesats, Cybersecurity in Space* by Patrick Stakem
- 1 Historical NASA space mission pin

- Over 100 historical documents, spaceflight mission planning guides, satellite cybersecurity guides, and CubeSat engineering specification documents to guide the user through preparation for a real CubeSat launch
- A 12-month subscription to the Kirkwall IoT monitoring and security platform to monitor any sensors connected to the platform through the QWIIC connect system.

In preparation for this build, users are advised to have the following tools handy on their respective workbenches:

- Safety glasses (to protect eyes while soldering or trimming leads)
- Soldering iron and solder
- Needle nose pliers (to bend leads and hold parts)
- Side cutters (to trim leads)
- PC/Laptop to flash & setup microcontrollers
- PC/Laptop to setup SD card with ‘cubesatsim’ & 'foxinbox' image
- Blue mounting putty to hold components in place while soldering
- Liquid flux
- Hotglue gun to secure wires to solar panels
- Multimeter for testing solar panels & batteries

Our team is thrilled to offer this package to you as the first of many Amateur radio product offerings to come.

[ANS thanks HeathKit for the above information]

Changes to AMSAT TLE Distribution for March 28, 2025

Two Line Elements or TLEs, often referred to as Keplerian elements or keps in the amateur community, are the inputs to the SGP4 standard mathematical model of spacecraft orbits used by most amateur tracking programs. Weekly updates are completely adequate for most amateur satellites. TLE bulletin files are updated daily in the first hour of the UTC day. New bulletin files will be posted immediately after reliable elements become available for new amateur satellites. More information may be found at
 https://www.amsat.org/keplerian-elements-resources/
<https://www.amsat.org/keplerian-elements-resources/>.

The following satellite has been removed from this week's AMSAT TLE distribution:

KSU-Cubesat NORAD Cat ID 47954 Decayed from orbit on or about 21 March 2025

Provisional elements for the upcoming Fram2Ham mission have also been added courtesy of ARISS, and will be updated when the SpaceX Dragon vehicle attains orbit. Predictions based on these elements will be invalid if the launch is delayed past the planned 01 April 2025 03:20 UTC liftoff or if launch vehicle performance is off nominal. Updates will be found at www.amsat.org/tle/dailytle.txt as appropriate.

[ANS thanks Joe Fitzgerald, KM1P, AMSAT Orbital Elements Manager for the above information]

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*Need new satellite antennas? Purchase an M2 LEO-Pack from the **AMSAT Store! <https://amsat.org/product-category/hardware/>**When you purchase through **AMSAT, a portion of the proceeds goes towards **Keeping Amateur Radio in Space.*

ARISS News

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with

astronauts and cosmonauts aboard the International Space Station. The
downlink frequency on which to listen is 145.800 MHz worldwide.

Scheduled Contacts

Lakeside Junior High School, Springdale, AR, direct via KJ5ANC

The ISS callsign is presently scheduled to be NA1SS
The scheduled crewmember is Nichole Ayers KJ5GWI
The ARISS mentor is K4RGK

Contact is go for: Mon 2025-03-31 18:05:26 UTC 71 deg

Watch for Livestream at
https://www.youtube.com/@SpringdaleSchoolsTV
https://www.youtube.com/watch?v=n6O9pbMAP0E
https://live.ariss.org/

Sayama Technical High School, Sayama, Japan, direct via JA1YUT

The ISS callsign is presently scheduled to be OR4ISS
The scheduled crewmember is Takaya Onishi KF5LKS
The ARISS mentor is 7M3TJZ

Contact is go for: Wed 2025-04-02 09:07:21 UTC 83 deg

Université de Namur asbl, Namur, Belgium, telebridge via IK1SLD

The ISS callsign is presently scheduled to be OR4ISS
The scheduled crewmember is Don Pettit KD5MDT
The ARISS mentor is ON6TI

Contact is go for: Wed 2025-04-02 15:11:17 UTC 33 deg

City of St. Petersburg School, St. Petersburg, Russia, direct via TBD

The ISS callsign is presently scheduled to be RSØISS
The scheduled crewmember is Aleksey Ovchinin
The ARISS mentor is RV3DR

Contact is go for 2025-04-03 12:45 UTC

Ufa City School, Ufa, Russia, direct via TBD

The ISS callsign is presently scheduled to be RSØISS
The scheduled crewmember is Ivan Vagner
The ARISS mentor is RV3DR

Contact is go for 2025-04-04 10:25 UTC

Lyceum No. 23 of Kaliningrad City, Kaliningrad, Russia, direct via TBD

The ISS callsign is presently scheduled to be RSØISS
The scheduled crewmember is TBD
The ARISS mentor is RV3DR

Contact is go for Mon 2025-04-07 11:10 UTC (***)

Many times a school may make a last minute decision to do a Livestream or
run into a last minute glitch requiring a change of the URL but we at ARISS
may not get the URL in time for publication. You can always check
https://live.ariss.org/ to see if a school is Livestreaming.

As always, if there is an EVA, a docking, or an undocking; the ARISS radios

are turned off as part of the safety protocol.

The crossband repeater continues to be active (145.990 MHz up {PL 67} & 437.800 MHz down), If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

Upcoming Satellite Operations

A growing number of satellite rovers are currently engaged in sharing their grid square activations on https://hams.at. By visiting the website, you gain easy access to comprehensive information about the operators responsible for activating specific grid squares. Additionally, you have the ability to assess the match score between yourself and a particular rover for a given pass, while also being able to identify the upcoming satellite passes that are accessible from your location.

No current operations listed.

[ANS thanks Ian Parsons, K5ZM, AMSAT Rover Page Manager, for the above information]

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* Want to fly the colors on your own grid expedition?*
Get an AMSAT car flag and other neat stuff from our Zazzle store <https://www.zazzle.com/store/amsat_gear>!
25% of the purchase price of each product goes towards Keeping Amateur Radio in Space

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AMSAT Ambassador Activities

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

AMSAT Ambassador Clint Bradford, K6LCS, says,

"Think a 75-minute presentation on "working the easy satellites" would be appropriate for your club or event? Let me know by emailing me at k6lcsclint (at) gmail (dot) com or calling me at 909-999-SATS (7287)!"

Clint has NEVER given the exact same show twice: EACH of the 150+ presentations so far has been customized/tailored to their audiences.

Scheduled Events

April 4 – 5, 2025
Southeastern VHF Conference 2025
Quality Inn
3095 Wilma Rudolph Blvd
Clarksville, TN 37040
W4FCL

April 5, 2025

*RARSfest*Jim Graham Building
NC State Fairgrounds
Youth Center Drive, Gate 5
Raleigh NC
https://www.rarsfest.org/index.php
K4EB, N4AEW, W1DCM, KK4HG, N4HF

Interested in becoming an AMSAT Ambassador? AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

For more information go to: https://www.amsat.org/ambassador/ <https://www.amsat.org/ambassador/>

[ANS thanks Bo Lowrey, W4FCL, Director – AMSAT Ambassador Program, for the above information]

Satellite Shorts from All Over

+ As part of NASA’s SpaceX Crew-11 mission, four crew members from three space agencies will launch in the coming months to the International Space Station for a long-duration science expedition aboard the orbiting laboratory. NASA astronauts Commander Zena Cardman, KJ5CMN, and Pilot Mike Fincke, KE5AIT, JAXA (Japan Aerospace Exploration Agency) astronaut Mission Specialist Kimiya Yui, KG5BPH, and Roscosmos cosmonaut Mission Specialist Oleg Platonov will join crew members aboard the space station no earlier than July 2025. (ANS thanks NASA for the above information.)

+ JARL will attempt to turn on the FO-29 analog transponder at the following times (UTC) in April and May. The transponder will remain operational from activation until the satellite's under-voltage control shuts down the transponder.

April
5th 00:39-
6th 01:29-
12th 01:13-
13th 02:04-
20th 02:40-
26th 00:37-
27th 01:27-
29th 01:22-

May
3rd 01:11-
4th 00:16-
5th 01:06-
6th 01:57-
10th 01:46-
17th 00:34-
18th 01:24-
24th 01:08-
25th 01:59-
31st 01:42-

(ANS thanks JARL for the above information.)

+ Operations of the Amateur Radio Unit on board PO-101 (Diwata-2) have been paused due to thermal conditions on-orbit. More information can be found at https://x.com/Diwata2PH/status/1905508075702038805 (ANS thanks the

Philippine Space Agency for the above information.)

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

- Societies (a recognized group, clubs or organization).
- Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
- Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
- Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor,

Paul Stoetzer, N8HM
n8hm [at] arrl.net <http://arrl.net>

ANS is a service of AMSAT, the Radio Amateur Satellite Corporation, 712 H Street NE, Suite 1653, Washington, DC 20002